WASHINGTON DEPARTMENT OF ECOLOGY

ENVIRONMENTAL ASSESSMENT PROGRAM

FRESHWATER MONITORING UNIT

STREAM DISCHARGE TECHNICAL NOTES

STATION ID: 32A105

STATION NAME: Walla Walla River at Beet Road

WATER YEAR: 2015

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Introduction

Watershed Description

The Walla Walla River is a tributary of the Columbia River, joining the Columbia just above Wallula Gap in southeastern Washington. The headwaters of the Walla Walla River lie in the Blue Mountains of northeastern Oregon. The Walla Walla River supports populations of spring Chinook salmon, summer steelhead, and bull trout. Land use in the watershed is mostly dryland and irrigated agriculture.

Gage Location

The gage house is located on the left bank near the Frog Hollow Road and Beet Road intersection at river mile 36.5. It is located approximately one-quarter mile downstream of the Gardena Farms Irrigation District #13 diversion. The period of record for this station is June 2002 to the present.

Table 1. Basin Area and Legal Description

Drainage Area (square miles)	125(Streamstats)
Latitude (degrees, minutes, seconds)	46° 01' 25" N
Longitude (degrees, minutes, seconds)	118° 25' 33" W

Table 2. Discharge Statistics.

Mean Annual Discharge (cfs)	126
Median Annual Discharge (cfs)	39
Maximum Daily Mean Discharge (cfs)	2000
Minimum Daily Mean Discharge (cfs)	14
Maximum Instantaneous Discharge (cfs)	2520
Minimum Instantaneous Discharge (cfs)	11
Discharge Equaled or Exceeded 10 % of Recorded Time (cfs)	314
Discharge Equaled or Exceeded 90 % of Recorded Time (cfs)	20
Number of Days Discharge is Greater Than Range of Ratings	0
Number of Days Discharge is Less Than Range of Ratings	0
Number of Un-Reported Days	0
Number of Days Qualified as Estimates	6
Number of Modeled Days	0

Note: Statistics displayed in Table 2 may not include values in which the predicted discharge exceeds the range of ratings.

Table 2 Discussion (Discharge Statistics)

The six estimated days were caused by equipment issues. The missing and questionable data were replaced with regressed data from Ecology stream gage 32A100 (Walla Walla River at East Detour Road). Nine discharge measurements were taken throughout the water year, ranging from 15 to 377 cfs.

Table 3. Error Analysis Summary.

Potential Logger Drift Error (% of discharge)	0.90
Potential Weighted Rating Error (% of discharge)	12.9
Total Potential Error (% of discharge)	13.8

Table 3 Discussion (Error Analysis)

The potential logger drift refers to the amount of instrument drift that was corrected in the stage record.

The potential weighted rating error is based on the quality of the individual discharge measurements used to define the particular rating and how those defining measurements related to the rating.

Table 4. Stage Record Summary

Minimum Recorded Stage (feet)	2.52
Maximum Recorded Stage (feet)	7.45
Range of Recorded Stage (feet)	4.93

Table 4 Discussion (Stage Record)

Peak flow occurred February 10, 2015 during a precipitation event. The lowest flow of the water year occurred in late September 2015.

Table 5. Rating Table Summary

Rating Table No.	125	18	136
Period of Ratings	10/1/14 to 10/28/14	10/2/14 to 11/25/14	11/25/15 to 2/11/15
Range of Ratings (cfs)	10 to 2850	10 to 2850	8.2 to 2850
No. of Defining Measurements	22	11	23
Rating Error (%)	11.9	16.4	12.1

Rating Table No.	19		
Period of Ratings	2/10/15 to 9/30/15		
Range of Ratings (cfs)	0 to 2850		
No. of Defining Measurements	17		
Rating Error (%)	12.5		

Rating Table No.			
Period of Ratings			
Range of Ratings (cfs)			
No. of Defining Measurements			
Rating Error (%)			

Table 5 Discussion (Rating Tables)

Each year, a recreational swimmers dam is constructed downstream of the gage. This activity can lead to multiple ratings during the summer and early fall.

A significant channel geometry change occurred during the February, 2015 precipitation event.

Table 6. Model Summary

Model Type (Slope conveyance, other, none)	n/a
Range of Modeled Stage (feet)	n/a
Range of Modeled Discharge (cfs)	n/a
Valid Period for Model	n/a
Model Confidence	n/a

Table 6 Discussion (Modeled Data)

No high-flow model was used for WY 2015.

Table 7. Survey Type and Date (station, cross section, longitudinal)

Type	Date
n/a	n/a

Table 7 Discussion (Surveys)

Activities Completed

Replaced DCP in early April.

Appendix